

Nestor MURPHY et al
Serial No. 09/921,303
May 8, 2003

IN THE CLAIMS

The following claim set replaces all prior versions, and listings, of claims in the application:

1. (Presently Amended) A substrate having a hydrophobic surface coating comprised of a silicon oxide anchor layer which exhibits a root mean square surface roughness of less than about 6.0 5.0 nm.
2. (Canceled)
3. (Original) The substrate of claim 1, wherein the anchor layer exhibits a surface roughness of greater than about 4.0 nm.
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4. (Original) The substrate of claim 1, wherein the hydrophobic coating further comprises the humidified vapor-deposited reaction product of at least one alkylchlorosilane applied over the anchor layer.
5. (Original) The substrate of claim 4, wherein the alkylchlorosilane is dimethyldichlorosilane or trimethylchlorosilane.
6. (Original) The substrate of claim 1, wherein the hydrophobic coating comprises a layer of a humidified vapor-deposited reaction product of dimethyldichlorosilane (DMDCS) on the silicon oxide anchor layer, and a layer of a humidified vapor-deposited reaction product of trimethylchlorosilane (TMCS) applied over the DMDCS layer.
7. (Original) The substrate of claim 1, wherein the hydrophobic coating comprises a layer of polydimethylsiloxane (PDMSO) chemically bound to said anchor layer.
8. (Original) The substrate of claim 1, wherein the hydrophobic coating comprises a layer of cross-linked polysiloxane chemically bound to said anchor layer.
9. (Original) The substrate of claim 8, wherein the hydrophobic coating comprises at least one layer which is the humidified vapor-deposited reaction product of

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dimethyldichlorosilane (DMDCS) or trimethylchlorosilane (TMCS) applied over the cross-linked polysiloxane layer.

10. (Original) A substrate having a hydrophobic surface coating comprised of a silicon oxide anchor layer exhibiting a haze value of less than about 3.0%.

11. (Original) The substrate of claim 10, wherein the anchor layer exhibits a haze value of less than about 2.0%.

12. (Original) The substrate of claim 10, wherein the anchor layer exhibits a haze value of less than about 1.5%.

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13. (Original) A substrate which comprises a hydrophobic coating having an anchor layer on a surface of the substrate comprised of a humidified reaction product of silicon tetrachloride vapor-deposited at a relative humidity of less than about 50%.

14. (Original) The substrate of claim 13, wherein the silicon tetrachloride is vapor-deposited at a relative humidity of less than about 45%.

15. (Original) The substrate of claim 13, wherein the silicon tetrachloride is vapor-deposited at a relative humidity of less than about 40%.

16. (Original) The substrate of claim 13, wherein said hydrophobic coating is comprised of the humidified reaction product of said silicon tetrachloride and an alkylchlorosilane.

17. (Original) The substrate of claim 16, wherein said alkylchlorosilane includes trimethylchlorosilane (TMCS).

18. (Original) The substrate of claim 17, wherein said silicon tetrachloride and TMCS are vapor-deposited as a mixture.

19. (Original) The substrate of claim 18, wherein said mixture contains a ratio of said silicon tetrachloride to TMCS of between about 4.0:05 to about 4.0:1.5.

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20. (Original) The substrate of claim 18, wherein said mixture contains a ratio of said silicon tetrachloride to TMCS of about 4.0:1.0.

21 – 54 (Cancelled).

55. (Presently Amended) A coated glass substrate made by the a process of claim 44 comprising:

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- (a) contacting a surface of the glass substrate to be coated with a silicon tetrachloride vapor for a time sufficient to form a silicon oxide layer on the surface of the glass substrate; and then
- (b) simultaneously contacting the silicon oxide layer with vapors of silicon tetrachloride and dimethyldichlorosilane (DMDCS) for a time sufficient to form a cross-linked layer of polydimethylsiloxane (PDMSO).

56. (Original) The substrate of claim 4, wherein the alkylchlorosilanes comprise dimethyldichlorosilane and methyltrichlorosilane.

57. (Original) The substrate of claim 4, wherein the alkylchlorosilanes are dimethyldichlorosilane and methyltrichlorosilane and are added in equimolar amounts.

58. (Original) The substrate of claim 56 wherein the ratios of dimethyldichlorosilane and methyltrichlorosilane are in the range of from 5 part to 1 part to about 1 part to 3 part respectively by weight.

59. (Original) The substrate of claim 56 wherein the alkyl chlorosilane layer is capped with methyltrichlorosilane.

60. (Presently Amended) The substrate of claim 56 wherein the alkyl chlorosilane layer is capped with a fluoroalkylsilane FAS(B) $\text{CF}_2\text{FCO}(\text{CH}_2)_3\text{SiCl}_2\text{CH}_3$.

61. (Original) The substrate of claim 1 wherein the hydrophobic coating comprises a layer of a humidified vapor-deposited reaction product of

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dimethyldichlorosilane and methyltrichlorosilane on the silicon oxide anchor layer, and a capping layer of a humidified vapor-deposited reaction product of trimethyl chlorosilane applied over the DMDCS and TMCS layer.

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62. (Presently Amended) The substrate of claim 4 wherein silicon tetrachloride is added to a reaction chamber in an equimolar amount with at least one alkylchlorosilane selected from the group consisting of the alkylchlorosilanes are dimethyldichlorosilane, methyltrichlorosilane, trimethylchlorosilane and silicon tetrachloride chlorofluoroalkylsilane added to the reaction chamber in equimolar amounts.

63. (Presently Amended) The substrate of claim 62 comprising wherein the CF₂FCO(CH₂)₃SiCl₂CH₃ FAS(B) is added as a capping layer.

64 – 70 (Canceled).
